

REMARKS

Claims 1-6 are pending in the application and stand rejected. By the present amendment, claim 1 has been amended and claims 7-12 have been added. The Examiner's reconsideration of the rejection in view of the above amendments and following remarks is respectfully requested.

Claim Rejections- 35 U.S.C. § 102(e):

Claims 1 and 4 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Bronner et al. (U.S. Patent No. 6,177,696).

At the very minimum, claim 1 is believed to be patentably distinct over Bronner since Bronner does not disclose a buried plate that contacts a first conductive material comprising a pillar, wherein the buried plate and first conductive material form a first electrode, as essentially claimed in claim 1. Indeed, although Bronner discloses a first plate of a capacitor comprising a buried plate (14) and a hemispherical-grained silicon film (18), Examiner acknowledges (on Page 4 of the Office Action) that Bronner does not disclose a first plate comprising pillars. Thus, claim 1 is believed to be patentably distinct and patentable over Bronner.

Claim 4 depends from claim 1. Therefore, dependent claim 4 is allowable for at least the same reasons as claim 1. Accordingly, the withdrawal of the claim rejections under 35 U.S.C. § 102(e) is respectfully requested.

Claim Rejections- 35 U.S.C. § 103(a):

Claims 2, 3, and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bronner as applied to claim 1 and further in view of Park (U.S. Patent No. 5,677,225). Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Bronner as applied to claim

1, and further in view of Chang (U.S. Patent No. 6,077,739).

Claim 1 has been amended to recite a first conductive material comprising pillars. In the Office Action, Examiner relies on Park as disclosing pillars to cure the deficiencies of Bronner. Therefore, Applicant will address the patentability of claim 1 together with claims 2, 3 and 6, in view of the combination of Bronner and Park.

To establish a *prima facie* case of obviousness based on a combination of references, various criteria must be met. For instance, the combination *must* teach or suggest all the claim limitations. Further, there must be some suggestion or motivation in the references or in the knowledge generally available to one skilled in the art to combine their teachings. The teaching or suggestion to make the claimed combination must both be found in the prior art and not based on impermissible hindsight in view of applicant's disclosure (see, e.g., MPEP 2141, 2143, 2143.03).

Here, although Park discloses pillars, it is respectfully submitted that the combination of Bronner and Park does not teach or suggest a first electrode comprising a buried plate and a first conductive material comprising a pillar, as essentially claimed in claim 1. Indeed, Examiner acknowledges that Bronner does not disclose pillars. Although Park arguably discloses a first conductive material having a pillar, Park does not disclose or suggest that the first conductive material contacts a buried plate to form a first electrode, as essentially claimed in claim 1.

In particular, although Park discloses a diffusion region (23), it is clear that the diffusion region is not a "buried plate" that is part of a capacitor electrode. This is apparent due to the fact that the diffusion region (23) is *p-doped* using Boron atoms from the BSG material (Col. 3, lines 50-63), whereas the first conductive layer (26) is formed under an atmosphere using Phosphorus,

which results in an n-doped material (see, Col. 4, lines 11-18). As such, the p-doped region (23) essentially serves to isolate the plate (26). Furthermore, Park expressly states that element (26) is the first plate electrode (col. 4, lines 26-30). Park does not disclose that diffusion region (23) is a buried plate that forms part of the first plate electrode (26). In fact, as shown in Fig. 2F, if the diffusion region (23) was part of the first plate electrode (26), the source region (39s), which is formed to contact the second (node) electrode (33) of the capacitor, would also contact the first plate electrode (26) via the diffusion region (23), which would result in an inoperable memory cell.

Thus, the combination of Bronner and Park does not disclose or suggest *a buried plate that contacts a first conductive material comprising a pillar, wherein the buried plate and the first conductive material form a first electrode*, as essentially claimed in claim 1. In fact, Park because Park uses a different doping type for the diffusion region (23) and electrode (26), one of ordinary skill in the art would not be motivated to combine the teachings of Bronner and Park to derive the claimed inventions. Therefore, at the very minimum, claim 1 is believed to be patentable and non-obvious over the combination of Bronner and Park.

Claims 2, 3, 5, and 6 depend, directly or indirectly, from claim 1. Since these claims depend from independent claim 1, they are believed to be patentable over the combination of Bronner and Park or Chang at least for the same reasons given above for claim 1. Therefore, withdrawal of the claim rejections under 35 U.S.C. § 103(a) is respectfully requested.

Claims 7-12 have been added to further define the invention. Applicant respectfully submits that claims 7-12 are allowable for at least the same reasons as given for claim 1.

In view of the foregoing remarks, it is respectfully submitted that all the claims now

pending in the application are in condition for allowance. Early and favorable action is respectfully requested.

Respectfully submitted,



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